

## CLAIMS

1.     An electric discharge machining apparatus using linear  
motor drive in which a machining power supply unit supplies  
a machining power in a space between an electrode and a  
5     workpiece and the workpiece is machined while the electrode  
and the workpiece are moved in relation to each other by  
means of a driving device implemented by a linear motor,  
wherein the electric discharge machining apparatus  
using linear motor drive has a cooling device for cooling  
10     at least one of a magnet and a magnet supporting plate which  
supports the magnet which are on the secondary side of the  
linear motor.

2.     An electric discharge machining apparatus using linear  
15     motor drive in which a machining power supply unit supplies  
a machining power in a space between an electrode and a  
workpiece and the workpiece is machined while the electrode  
and the workpiece are moved in relation to each other by  
means of a driving device implemented by a linear motor,  
20     wherein the electric discharge machining apparatus  
using linear motor drive comprises:

        a magnet supporting plate for supporting a magnet which  
is on the secondary side of the linear motor;

        a base plate formed with at least one hole portion;

25     a spacer for holding the magnet supporting plate and

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the base plate while leaving a predetermined space therebetween; and

a cooling device for injecting compressed gas from the hole portion of the base plate toward the magnet supporting plate.

3. The electric discharge machining apparatus according to claim 2, wherein the magnet supporting plate is formed with a cooling fin.

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4. The electric discharge machining apparatus according to any one of claims 1 to 3, wherein a dust cover is provided around the driving device configured by the linear motor.

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